SCIENCE AND ART OF CRICKET.

THE golfing world already owes a debt of gratitude to Mr. Beldam for his "Great Golfers." This companion volume, setting forth on the same lines the styles of play of our greatest cricketers, cannot fail to appeal strongly to all lovers of the most English of our national games. The method adopted here is identical with that of the earlier book. Each of the many batsmen pictured has been photographed in one or more characteristic attitudes before, during, or after the striking of the ball, and after a careful study of every picture Mr. Fry has set down his own interpretation for the guidance of the reader. No better guide could have been got, for among the great cricketers of our day Mr. Fry stands conspicuous as one who has studied the art of cricket with phenomenal success.

The book is divided into two parts. In part i. (individualities) close on 300 photographs are given of eighteen of our best known batsmen, including Grace, Ranjitsinhji, Trumper, Fry, Hill, Jackson, Duff, MacLaren, and so on. In part ii. (strokes illustrated) the various kinds of recognised strokes are systematically discussed and illustrated by photographs of other great batsmen. There is, of course, a good deal of repetition of the same ideas in the letterpress of these two parts, but each has its own value. In the one case it is the individual batsman whose pose and actions are being studied; in the other it is the kind of stroke which is the object of discussion, and this is helped out by an appeal to the example of a number of different cricketers. The volume ends with a short but very practical and interesting chapter upon the art of timing with the camera. We learn that the operator sometimes used a finger release of the shutter and sometimes an electric. The latter method enabled Mr. Beldam to act, in same cases, both as bowler and photographer. The requisites for good work of this kind are complete knowledge of the mechanism and capabilities of the camera, thorough acquaintance with the game itself, and a delicacy of judgment which must be partly inborn and strongly developed by practice. We are not told what proportion of photographs taken were failures, but the beauty and clearness of the 600 here shown prove that Mr. Beldam is a master hand in the art of taking action-photographs.

Where almost every picture is admirable, and illustrates some essential part of a particular stroke, it is not possible to choose for reproduction any that might be regarded as representative. W. G. Grace, for example, is shown in twenty-six different attitudes, and all have some lesson to tell. In the photograph reproduced we have the finish of an on-drive, in which the turn of the body has aided powerfully in giving full effect to the stroke. The eyes are still looking at the spot where the ball was when it was struck. The whole series of photographs proves that all great batsmen follow the ball with their eye right up to the moment of striking. It is this which gives precision, just as in golf.

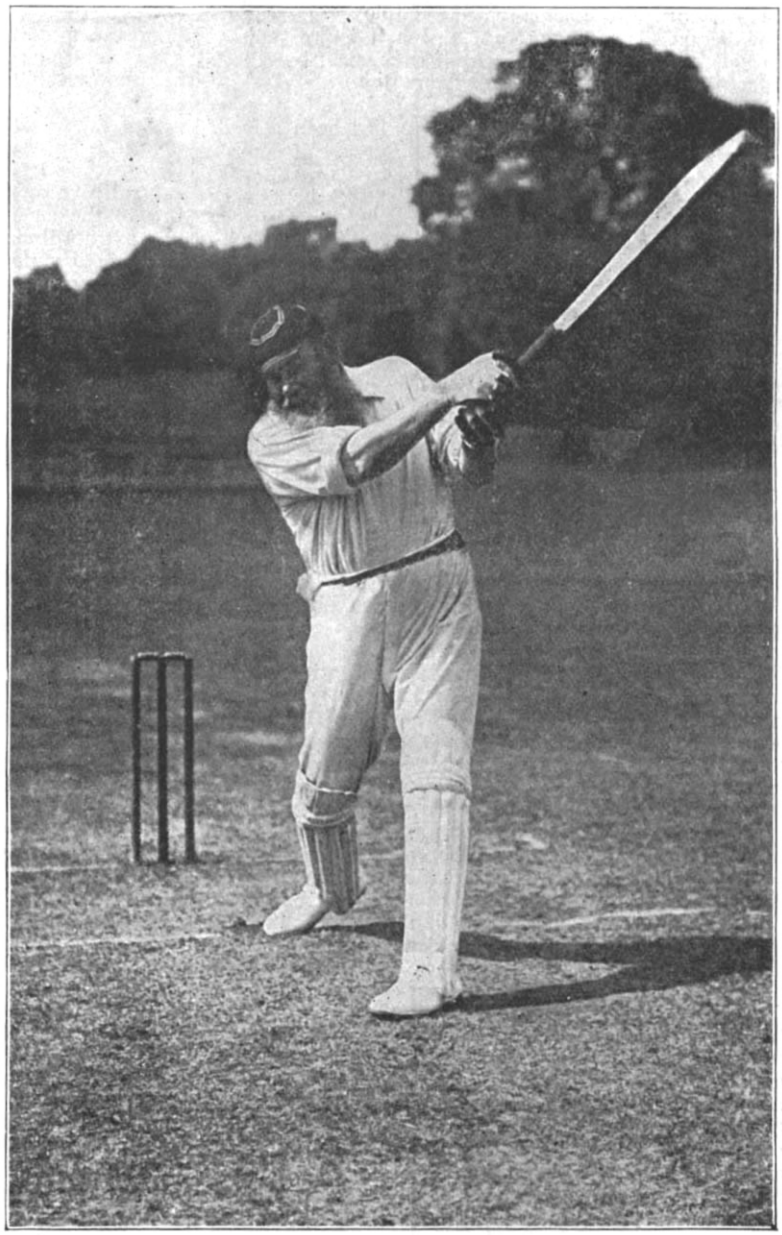

FIG. 1.—W. G. Grace—Finish of an On-drive.

Ranjitsinhji is figured in twenty photographs, and it is in the comparison of these with the attitudes of other cricketers that the limitations of the method of

[1] "Great Batsmen, their Methods at a Glance." By G. W. Beldam and C. B. Fry. Pp. xiv+716; illustrated by 600 Action-photographs. (London: Macmillan and Co., Ltd., 1905.) Price 21s. net.

© 1905 Nature Publishing Group

instantaneous photography appear. Except in a few cases there is no appreciable difference between his attitudes and those of others; the characteristic style of Ranjitsinhji depends upon the rapidity of the successive movements which go to make the complete stroke, and this is necessarily lost in the momentary picture. One very characteristic poise of body is given in the eighteenth of the series of pictures of the Indian cricketer. Here we have the finish of the well known leg-glance. To quote from Mr. Fry's description :—"the unique part of the stroke is the foot work . . . the left foot is moved across right in front of the wicket, passing immediately across the right. The body from the hips upwards is twisted round towards the leg-side. The bat, at the instant it meets the ball, is perfectly upright just in front of the left knee. Playing this stroke in this way would be impossible for anyone less supple and less quick than Ranjitsinhji."

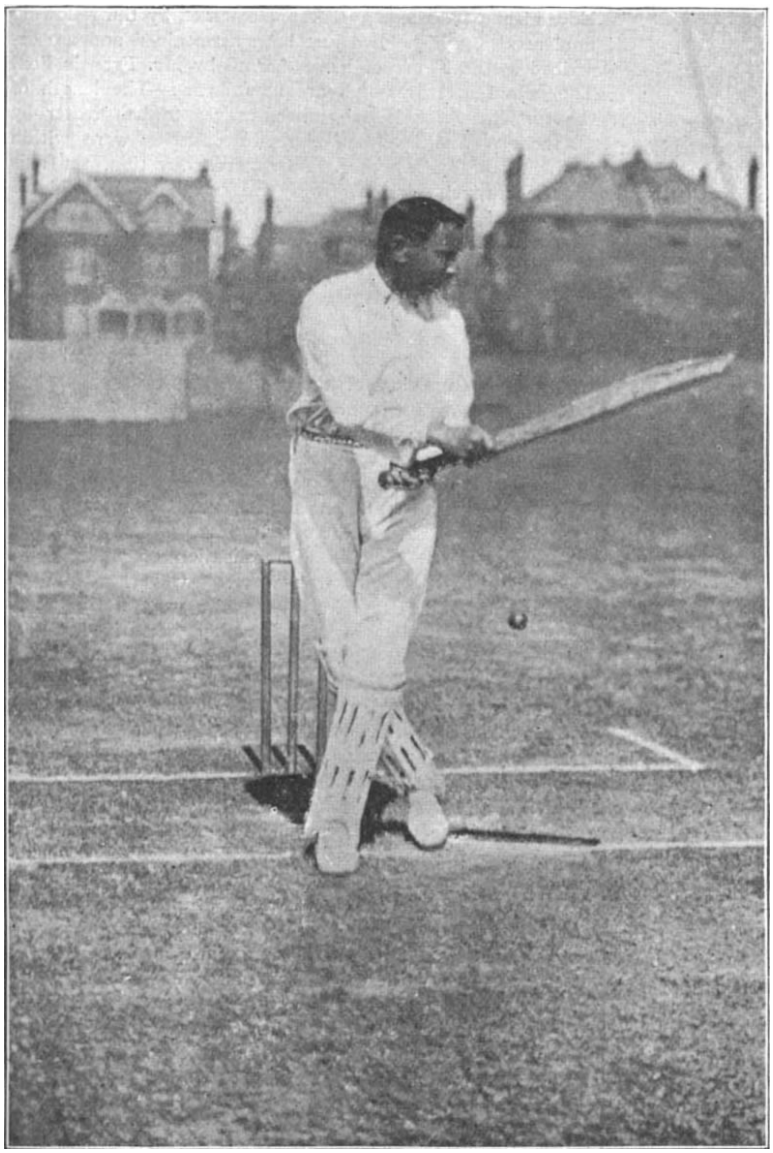

FIG. 2.—K. S Ranjitsinhji—Finish of the Leg-glance.

This is not the place for discussing in any detail the many different kinds of strokes recognised in cricket, though a good deal might be spoken regarding the dynamical principles underlying some of the methods indicated. For example, the lowering of the grip of the right hand in defensive strokes, as when the player plays back, is the obvious way of getting a more powerful couple to act on the bat and prevent it being rotated by the impulse of the ball. The player probably does not think of it in that way, but by experience he has found it to be the most effective method. The important distinction between wrist play and arm play is referred to again and again, and the value of wrist play insisted upon with great incisiveness. It seems to us, however, that Mr. Fry occasionally directs attention to evidence of powerful wrist play in certain attitudes where, strictly speaking, it does not to any marked degree exist. To bring out our meaning more precisely, let us suppose the batsman is taking his stand at the wicket. His first position with the bat resting in the block hole and his eyes looking towards the bowler gives him such a stance that when he rises upright with the bat drooping easily in front of him the face of the bat is directed straight towards the bowler. This is the zero position through which the bat will swing with its face always properly oriented. If he lifts both arms at the same rate by a rotation about a horizontal axis parallel to a line through the shoulders, the face of the bat will still look in the same direction; but if he moves the arms in any other way the conditions of the geometrical constraint imposed by the grip of the hands on the handle will necessitate a combined rotational and translational motion. Let anyone with bat in hand try to shape for a drive or a cut and endeavour at the same time to prevent the bat rotating round its own axis of figure, and he will find himself forced into the most awkward and constrained of attitudes. In the description of plate xxii., showing Grace preparing for the on-drive the finish of which we have reproduced, the last sentence reads thus: "If you study the turn of his bat you will see that in order to bring the face of the bat against the ball he must put in a pronounced turn of the wrist." The truth is that if the right elbow is kept down the bat must take the position shown, and the accompanying *turn* of the wrists is slight, involuntary, and *natural*, and mainly in the left wrist. In plate xxiii., reproduced above, the geometrical conditions of constraint compel a rotation of the bat round its axis in the opposite direction. Let anyone go through the motions slowly with the initial and final attitudes as shown in these two plates, and he will find the bat take the positions pictured passing through the zero position with face looking front, and through the whole motion he will not be *sensible* of any wrist action at all. The coordinated but geometrically

© 1905 Nature Publishing Group

complex movements of arms and body give to the bat held by the two hands a complex screw motion which may approximately be described as a rotation about an oblique axis outside the bat altogether. Plate ii. of L. C. H. Palairet's series, showing his second position, is a perfect illustration of the remarks just made; with the attitude of body and arms as given it would be impossible for the bat to have any other position without an unnatural turn of the wrists.

The effect of the true wrist-action is well described in the later part of the book. It is as effective in cricket as in golf, bringing into play a rapid acceleration just at the instant of impact. It is at the foundation of all graceful batting. As Mr. Fry well remarks, "wrist-work is the chief secret of a versatile, neat and effective style."

The book is full of a great variety of most interesting and instructive points. Those among us whose cricket is a memory will almost wish they were twenty or thirty years younger if only for the chance of testing the soundness of the teaching of Messrs. Beldam and Fry's remarkable volume; while the youthful devotee eager to improve himself in the most attractive part of our national sport will get many valuable hints from a careful perusal of its pages and study of its pictures. C. G. K.

NOTES.

THE council of the Royal Meteorological Society has awarded the Symons gold medal to Lieut.-General Sir Richard Strachey, G.C.S.I., F.R.S., in recognition of the valuable work which he has done in connection with meteorological science. The medal will be presented at the annual general meeting of the society on January 17, 1906.

THE suggestion made by Prof. Milne in our correspondence columns this week, that an intercolonial meeting of the British Association should be held in London, is well worthy of consideration. Such a conference of representatives of science in British dominions beyond the seas and at home would strengthen the bond of union existing between them, and do something to coordinate the intellectual forces of our Empire. It is essential that men of science widely separated from one another should have opportunities of exchanging opinions upon investigations and results in which they are interested; and the advantages of such conventions are felt long after the meetings have ended. It is probable that Prof. Milne's proposal will meet with the approval of members of the association engaged in scientific work.

MEMBERS of the British Association who recently visited the Victoria Falls will be interested to learn that the small herd of hippopotami that frequents the islands above the Falls, and adds substantially to the attractions of the place, has again become troublesome. Apparently the animals have been irritated by the increasing traffic on the Zambesi; for a note in *South Africa* of November 18 states that several boats have been upset, causing one fatality and several narrow escapes. "Hippo, from any sentimental point of view," it is remarked, "are hardly the sort of things to be preserved as pets on a portion of the river where there is constant traffic, and it is to be hoped that every effort will be made to exterminate them before more serious accidents occur. . . . Those desirous of seeing the hippo in their natural haunts should find some more solitary spot where there is less danger to human life."

THE *British Medical Journal* announces that the next meeting of the German Society of Experimental Psychology will be held at Würzburg on April 10–13, 1906. Reports will be presented on the following subjects:—(1) The relations between experimental phonetics and psychology (by E. Krueger); (2) experimental æsthetics (by O. Kuelpe); (3) the psychology of reading (by F. Schumann); and psychiatry and individual psychology (by R. Sommer).

THE account of the surveying work connected with the construction of the Simplon Tunnel, in NATURE of November 9 (p. 30), may be supplemented by the following final results, which have just been ascertained and are described in the *Times* of November 18 by Mr. Francis Fox. The actual measurements are as follows:—The length of the tunnel, which is 12½ miles, proves to be greater by 31 inches. The levels of the two galleries were within 3½ inches of one another. As regards direction, the axis of the tunnel, driven from the north end, deviated 4 1-3 inches towards the west, whilst the line driven from the south end deviated 3 2-3 inches towards the east; consequently the greatest divergence from the true line was 4 1-3 inches, which is well within the calculated probable error.

A *Times* correspondent gives in the issue of November 20 a graphic description of the means taken to stamp out yellow fever in Panama. The first cases of the disease were concealed, and it was not until a serious epidemic was in progress that President Roosevelt, on his own initiative, Congress having refused to aid him, appointed Judge Magoon to Panama as Resident Governor of the canal zone with autocratic power. The prevalence of fever was bad enough, but the demoralisation of public spirit in the American colony was worse. Governor Magoon found that, while some in utter panic were fleeing from the isthmus as a plague-spot, others had fallen into a state of cynical bravado. They professed contempt for the mosquito theory of disease dissemination, and refused to obey the preventive rules which had been formulated. They took a boastful delight in exposing themselves to mosquito bites, and tore holes in the netting which had been placed over the windows of the office buildings and hotels. The Governor soon changed all this, expressed his own fear of the disease, insisted that the evidence of the transference of the disease by mosquitoes was overwhelming, and arranged for the fumigation of every building in the city. Medical inspectors were also appointed who daily examined every inhabitant. The effect of these measures is shown by the figures of the incidence of the disease:—in May there were 38 cases; in June 62 cases; in July, after the institution of these measures, 42 cases; in August 27 cases; in September 6 cases; and since then not a single case, although a reward of 50 dollars, gold, has been offered for a notification.

MR. C. O. STEVENS, writing from Bradfield, Reading, states that on Friday last, November 17, widespread attention was attracted and curiosity aroused by sounds as of heavy-gun practice and rifle firing that made themselves felt, as well as heard, in the neighbourhood for miles around. They occurred, on and off, from about 11.30 a.m. until 4 p.m.

To the Irish Fisheries Board we are indebted for a copy of the first instalment of a list of the marine copepod crustaceans of Ireland, by Mr. J. Pearson, published as No. 3 of "Scientific Investigations" for 1904. The author states that previous students have mainly confined their investigations to the pelagic types, and that consequently

© 1905 Nature Publishing Group